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| <b>5 DETECTION OF FECAL MATERIAL</b>  | Page 1 of 3                    |
| <b>PRESUMPTIVE AND CONFIRMATORY TESTS FOR<br/>BIOLOGICAL SUBSTANCES – FORENSIC BIOLOGY SECTION<br/>PROCEDURE MANUAL, SECTION II</b>   | Issue No.: 3                   |
|   | Effective Date: 1-October-2006 |
| <p>5 DETECTION OF FECAL MATERIAL</p> <p>5.1 EDELMAN’S TEST (Reference 12, pp. 4-7, Appendix A)</p> <p>5.1.1 Safety Considerations</p> <p>5.1.1.1 Mercuric chloride - Caution! Very toxic if inhaled or swallowed, or if in contact with skin! Poisonous! Dangerous! May be fatal!</p> <p>5.1.1.2 Zinc chloride - Caution! Corrosive!</p> <p>5.1.1.3 Amyl alcohol (isopentyl alcohol) - Caution! Harmful if swallowed or inhaled! Irritant! Combustible!</p> <p>5.1.2 Equipment</p> <p>5.1.2.1 Scissors</p> <p>5.1.2.2 Tweezers</p> <p>5.1.2.3 Centrifuge</p> <p>5.1.2.4 Long wavelength ultraviolet light source</p> <p>5.1.2.5 Vortex</p> <p>5.1.3 Materials</p> <p>5.1.3.1 Disposable pipettes</p> <p>5.1.3.2 Test tubes and/or microcentrifuge tubes</p> <p>5.1.4 Reagents</p> <p>5.1.4.1 10% Saturated mercuric chloride solution (1 g in 10 ml of 95% ethanol)</p> <p>5.1.4.2 10% Saturated zinc chloride solution (1 g in 10 ml of 95% ethanol)</p> <p>5.1.4.3 Amyl alcohol (isopentyl alcohol)</p> <p>5.1.4.4 Distilled water</p> <p>5.1.4.5 Positive control (known feces)</p> <p>5.1.5 Storage</p> <p>5.1.5.1 The 10% saturated solutions of mercuric chloride and zinc chloride are stable at room temperature.</p> |                                |

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| <p>5.1.6 Labeling</p> <p>5.1.6.1 Label each bottle with the contents and lot number (date of preparation followed by the initials of person preparing the solution).<br/>Example: 10% saturated zinc chloride solution Lot Number 100899JD was prepared by Jane Doe on October 8, 1999.</p> <p>5.1.6.2 There is no expiration date (see 5.1.7 Minimum Standards and Controls).</p> <p>5.1.7 Minimum Standards and Controls</p> <p>5.1.7.1 A positive reagent control (known fecal stain), and a negative control (distilled water) must be tested and results documented in the case file. As a general rule a substrate control will not be tested nor is not necessary to test submitted control swabs.</p> <p>5.1.8 Edelman's Test Procedure</p> <p>5.1.8.1 To prepare an extract of the stain, place an approximate ½ cm² piece of suspected fecal stain and controls in appropriately labeled test tubes or microcentrifuge tubes, add a minimum of 3 drops of distilled water to each tube (use only the amount of distilled water necessary to saturate the stain) and leave at room temperature for at least 15 minutes.</p> <p>5.1.8.2 Remove the material and add a minimum of 3 drops of 10% saturated zinc chloride solution to the extract.</p> <p>5.1.8.3 Add 5 drops of amyl alcohol (isopentyl alcohol) to the extract and vortex.</p> <p>5.1.8.4 Centrifuge for 5 minutes. Pipet the supernatant layer into an appropriately labeled test tube.</p> <p>5.1.8.5 Add 3 drops of 10% saturated mercuric chloride solution.</p> <p>5.1.8.6 Observe color changes in both white and ultraviolet light. Document results. If urobilin is present the solution may become rose-pink, but will show a crab apple green fluorescence under long wave ultraviolet light.</p> <p>5.1.8.7 All controls must give the expected results before a conclusion can be reached on an unknown sample. When all controls work properly and a positive reaction is observed for the unknown sample, presence of feces is indicated.</p> <p>5.1.8.8 Interpretation</p> <p>5.1.8.8.1 Positive Reaction = Crab apple green fluorescence under long wave ultraviolet light</p> <p>5.1.8.8.2 Negative Reaction = No green fluorescence under long wave ultraviolet light</p> <p>5.1.8.8.3 Inconclusive Reaction = No green fluorescence of the positive control under long wave ultraviolet light</p> |                                |

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| <div data-bbox="344 296 683 331" data-label="Section-Header"> <p>5.1.8.9 Reporting Results</p> </div> <div data-bbox="457 363 1352 399" data-label="Text"> <p>5.1.8.9.1 Report positive test results as “Fecal material was indicated...”</p> </div> <div data-bbox="457 430 1365 466" data-label="Text"> <p>5.1.8.9.2 Report negative test results as “No fecal material was indicated”</p> </div> <div data-bbox="457 497 1386 562" data-label="Text"> <p>5.1.8.9.3 Report inconclusive test results as “The test for fecal material was inconclusive...”</p> </div> <div data-bbox="1380 732 1472 764" data-label="Text"> <p>◆END</p> </div> |                                |